Notice of Allowability	Application No.	Applicant(s)	
	09/677,569	SCHULTZ, ROBERT G.	
	Examiner	Art Unit	
	Qi Han	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *03/19/2004 and 11/09/2004*.

2. ☒ The allowed claim(s) is/are *1,4,5,8,9,11-19,21,23-25,31 and 33*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to Amendment

1. This communication is responsive to the applicant's appeal brief filed on 11/09/2004 and the amendment filed on 03/19/2004. The applicant(s) cooperated with the examiner to amend the independent claims 1 and 33 and cancel claims 7, 10 and 34 (see the examiner's amendment below).

The examiner withdraws the finality of the rejection of the last Office action because the applicant cooperated with the examiner to amend all the independent claims (see below).

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with the applicant's representative, Christopher M. Tucker on 9/21/2006, and the examiner also received fax regarding the proposed amendment for the claims (see attached Fax with this office action). The Examiner's Amendment is as following:

In the claims (refer to **the amendment filed on 03/19/2004**):

Regarding **claim 1**, on page 2, line 5 of the claim, after "a DSP chip in the audio input data path", insert --, wherein the DSP chip is co-located with the CPU on the motherboard--;

line 7 of the claim, after "a memory in", delete "electrical connection to".

Regarding **claim 7**, on page 3, cancel this claim.

Regarding **claim 10**, on page ,3 cancel this claim.

Regarding **claim 33**, on page 7, line 6 of the claim, after "converting said speech from an analog format to", replace "a digital signal" with --an audio digital signal--;

line 8 of the claim, after "processor is", replace "included" with --co-located with a CPU--;

line 11 of the claim, after "residing in a memory", insert --of said digital processor--;

after line 12, insert new lines of content: --loading an appropriate vocabulary into said speech engine in said of memory of said digital signal processor, depending on the context of operation being performed by a user--;

line 14 of the claim, after "electrical connection to said digital signal processor and", delete the words "said memory of";

line 16 of the claim, after "connection to said digital signal processor and", delete the words "said memory of".

Regarding **claim 34**, on page 7, cancel this claim.

------End of Examiner's Amendment-----

Allowable Subject Matter

3. Claims 1, 4-5, 8-9, 11-19, 21, 23-25, 31 and 33 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent **claims 1 and 33**, the instant application is directed to a computer motherboard architecture and the associated method of processing speech. The independent claims, combining certain well-known features in the art, identifies the uniquely distinct features of comprising:

a DSP chip in the audio input data path, wherein the DSP chip is co-located with a CPU on the computer motherboard; a memory in the DSP; a command and control speech engine residing in said memory of said DSP chip; wherein the speech engine includes a vocabulary of speech terms enabled to be loaded into said memory which are associated with specific instructions or contextual environments; and wherein the DSP serves as the preprocessor of all speech input prior to execution of instructions by the CPU to process the speech input and is enabled to be dynamically set by a user in either a continuous speech mode or a command and control mode.

The prior art of record, Lambrecht et al. (US 5,951,664), Simar, Jr. et al (US 6,182,203 B1) and Hansen et al (US 5,640,490), provided numerous teachings and approaches of computer architectures having audio/speech processing capability and real time multimedia applications, including speech recognition and synthesis, providing multimedia bus, interface, various bridge logics and multimedia devices dynamically programmed by a central controller (CPU) on motherboard; using separate DSP having a memory for speech recognition, providing separate

lexical access processor; and applying speech recognition feature to command mode or to other applications, such as word-processor document. However, the combined features stated above, are not anticipated by, nor made obvious over the prior art of the record.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

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Randolph Building
Alexandria , VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see http://pair-direct.uspto.gov.

QH/qh
September 22, 2006

RICHEMOND DORVIL
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FAX

To:	Examiner Han		
From:	Christopher M. Tucker		
Fax:	571 273 7604	**Pages:**	(including cover) 7
Phone:	571 272 7604	**Date:**	9/21/2006
Re:	Proposed claim amendments for 09/677,569		
	CC:		

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

● Comments:

Dear Examiner Han,

Please see the attached.

Regards,

Christopher M. Tucker

Examiner Han,

Re: U.S. Patent Application No. 09/677,569

With regard to our telephone conversation of today (September 21, 2006) concerning proposed claim amendments for the above-identified U.S. patent application, please see the following claim changes as previously discussed.

INFORMAL AMENDENT

Claim 1 (presently amended) A computer motherboard architecture comprising:

a computer motherboard possessing typical components including a CPU, a data bus, a power interface, and an audio input data pathway, said audio input data pathway connecting the audio input of the motherboard to the CPU;

a DSP chip in the audio input data path, wherein the DSP chip is co-located with the CPU on the motherboard;

a bridge interfacing between said DSP chip and the bus on the computer motherboard;

a memory in [~~electrical connection to~~] said DSP chip;

a command and control speech engine residing in said memory of said DSP chip;

wherein said DSP is enabled to operate in either command and control mode or continuous speech mode and said DSP serves as the preprocessor of all speech input prior to execution of instructions by the CPU to process the speech input and wherein said speech engine includes a vocabulary of speech terms enabled to be loaded into said memory which are associated with specific instructions or contextual environments, and

further wherein said DSP is enabled to be dynamically set by a user in either a continuous speech mode or a command and control mode.

Claims 2-3 (canceled)

Claim 4 (previously presented) A computer motherboard architecture according to claim 1 wherein said audio input data pathway comprises a microphone input, means for digitizing an audio input data pathway, and a DSP chip, bridge chip communicating with said bus.

Claim 5 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP chip is operable to convert said audio input into phonemes.

Claim 6-7 (canceled)

Claim 8 (previously presented) A computer motherboard architecture according to claim 1 wherein said vocabulary of speech terms is able to be defined by a user, either in a static or active mode.

Claim 9 (previously presented) A computer motherboard architecture according to claim 1 wherein said vocabulary of speech terms is refreshed by the CPU based upon the context of an application running on a host processor.

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Claim 10 (canceled)

Claim 11 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP chip is operable to perform menu selection including mobile phone audio functions comprising voice activated dialing, voice control, noise cancellation, and speech to signal conversion.

Claim 12 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP chip is enabled to perform noise cancellation functions.

Claim 13 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP chip is enabled to function in a command and control speech mode.

Claim 14 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP chip is enabled to function in a continuous speech mode.

Claim 15 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP chip is enabled to function in a mobile phone mode.

Claim 16 (previously presented) A computer motherboard architecture according to claim 1 wherein said DSP is enabled to function in a language translation mode.

Claim 17 (previously presented) A computer motherboard architecture according to claim 1 wherein said computer motherboard is a user-supported computer motherboard.

Claim 18 (previously presented) A computer motherboard architecture according to claim 17 wherein said user-supported computer is a voice activated user-supported computer.

Claim 19 (previously presented) A computer motherboard architecture according to claim 1 wherein said computer motherboard is a portable computer motherboard.

Claim 20 (canceled)

Claim 21 (previously presented) A computer motherboard architecture according to claim 1 wherein said computer motherboard is a desktop computer motherboard.

Claim 22 (canceled)

Claim 23 (previously presented) A computer motherboard architecture according to claim 1 wherein said computer motherboard is a video gaming system computer motherboard.

Claim 24 (previously presented) A computer motherboard architecture according to claim 1 wherein said computer motherboard is a computing and communications device computer motherboard.

Claim 25 (previously presented) A computer motherboard architecture of claim 1 wherein said computer motherboard is a component of a member selected from the group consisting of user supported computers, laptop computer, desktop computers, portable computers and mixtures thereof.

Claim 26-30 (canceled)

Claim 31 (previously presented) A computer motherboard architecture according to claim 1 wherein when said DSP is operating in command and control mode said DSP is operable to accommodate full interpreting and processing of said speech without said CPU being utilized.

Claim 32 (canceled)

Claim 33 (presently amended) A method of processing speech, the method comprising the steps of:

setting a computer in either command and control mode or continuous speech mode,

inputting speech into an audio input device wherein said audio input device is electrically connected to said computer,

converting said speech from an analog format to an audio digital signal,

transmitting said digital signal to a digital signal processor, wherein said digital signal processor is [~~included~~] co-located with a CPU on a motherboard of said computer and said digital signal processor is enabled to function as a preprocessor of all speech input,

analyzing said digital signal with at least said digital signal processor and a speech engine residing in a memory of said digital signal processor on said motherboard and electrically connected to said digital signal processor,

24 loading an appropriate vocabulary into said speech engine in said memory of said digital signal processor ~~including speech engine~~, depending on the context of the operation being performed by a user;

transmitting said analyzed digital signal of a computer command to a processor in electrical connection to said digital signal processor and [~~said memory of~~] said computer,

transmitting said analyzed digital signal of continuous speech to a processor in electrical connection to said digital signal processor and [~~said memory of~~] said computer,

performing an operation or command representative of said analyzed digital signal by said processor.

Claim (34) (canceled)

Sincerely,

Christopher M. Tucker
Agent for Applicant